Water Quality Report for 2007
Harford County Government

Last year, as in past years, your drinking water met all EPA and State health standards.

IS MY WATER SAFE?

In Harford County's system, the answer is yes. However, as with any other public water supply, your water is not 100% H2O.All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. Technically, a contaminant is anything that is not H_2O. It is important to remember that the presence of these contaminants does not necessarily indicate that the water poses a health risk.

Water, traveling on or in the ground, dissolves naturally occurring minerals, vegetation, and sometimes radioactive material, which can be the result of oil and gas production and mining activities. It can also pick up animal waste, pesticides, and debris from human activity. Rain can also wash waste on impervious surfaces (sidewalks, roads, and etc.) to the rivers and reservoirs.

For more information call the EPA's Safe Drinking Water Hotline (800-426-4791) or go to EPA: Ground Water and Drinking Water

WHAT IS IN THE WATER?

The tables list all of the drinking water contaminants that we detected. The contaminant levels from other utilities that have provided us with water have been incorporated into the tables. Unless otherwise noted, the data presented in these tables are from January 1st to December 31st, 2007. The definitions provided may be useful in interpreting the data.

Inorganic Contaminants (Lead & Copper)					
Contaminants	**AL**	**90th%**	**# Samples > AL**	**Violation**	**Typical Source**
Copper (ppm) (2005)	1. 3	**0. 1**	0	No	Erosion, corrosion of plumbing, wood preservatives.
Lead (ppb) (2005)	15	**3**	0	No	Erosion of natural deposits, corrosion of plumbing.

Contaminants (units)	**MCLG**	**MCL**	**Your Water CL**	**Low**	**High**	**Violation**	**Typical Source**
Inorganic Contaminants (Other)							
Antimony (ppb)	6	6	**3**	3	3	No	Discharge from petroleum refineries, ceramics, fire retardants, electronics, solder.
Barium (ppm)	2	2	**. 03**	. 03	.03	No	Erosion. Drilling waste and metal refineries.
Chromium (ppb)	100	100	**2**	2	2	No	Discharge from steel mills, pulp mills, erosion of natural deposits.

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Contaminants (units)	MCLG	MCL	Your Water CL	Low	High	Violation	Typical Source
Inorganic Contaminants (Other) continued							
Fluoride (ppm)	4	4	**2.1**	ND *	2.1	No	Erosion, water additive, discharge from fertilizer and aluminum factories. (Avg. 1.0)
Nitrate (ppm as Nitrogen)	10	10	**5. 0**	1.0	5.0	No	Natural deposits, runoff from fertilizer use
Disinfectants & Disinfection By-Products							
Chlorine (as Cl_2) (ppm)	4	4	**3.2**	0. 4	3.2	No	Water additive to control microbes. (Avg. 1.4)
HAA5 (Total Haloacetic Acids) (ppb) **For 2006 & 2007**	n/a **	60	**46**	37	47	No	By-product of drinking water chlorination**.** CL = rolling yearly average by quarter.
TTHMs **For 2006 & 2007** (Total Trihalomethanes) (ppb)	n/a	80	**37**	22	46	No	By-product of drinking water chlorination**.** CL = rolling yearly average by quarter.
Microbiological Contaminants							
Total Coliform (% of positive tests)	0	< 5%	**4. 0%**	ND	n/a	No	Naturally present in the environment. See **Total Coliform** in definitions.
Turbidity (NTU) TT ≤ 0.3 in 95% of samples in a month.	n/a	TT	**98.2%**	0.024	0.407	No	From soil runoff. (Avg. 0.040)
Organic Contaminants							
Carbofuran (ppb)	40	40	**5**	5	5	No	Leaching of soil fumigant.
Di (2-ethylhexyl) Phthalate (ppb)	0	6	**0. 5**	0.5	0.5	No	Discharge from rubber and chemical factories.
Toluene (ppm)	0	1	**0. 1**	ND	0. 9	No	Discharge from petroleum factories.
Xylenes (ppm)	10	10	**0. 1**	ND	0.6	No	Discharge from petroleum and chemical factories.
Radioactive Contaminants							
Gross Alpha (pCi/L) (2007)	0	15	**2**	2	2	No	Erosion of natural deposits.
Gross Beta (pCi/L) (2007)	0	50 ***	**5**	5	5	No	Decay of natural & manmade deposits.
Radium-226 (pCi/L) (2007)	0	5	**0. 3**	0.3	0. 3	No	Erosion of natural deposits.

Unregulated Contaminants	Avg.	Low	High	Typical Source
Bromodichloromethane (ppb)	2.9	ND	13.8	By-product of drinking water chlorination**.**
Chloroform (ppb)	14	ND	40	Industrial discharges; landfills, by-product of water chlorination**.**
Dibromochloromethane (ppb)	0. 5	ND	3.0	By-product of drinking water chlorination**.**
Methomyl (ppb)	5	5	5	Runoff from pesticide used on crops.
Nikel (ppb)	2	2	2	Erosion of natural deposits, leaching.
Sodium (ppm)	25	8.7	69	Erosion of natural deposits, leaching; water treatment chemicals.

For questions concerning this report you can contact Talad Said or Allen Webb at 410-638-3939, Monday thru Friday, 7 AM to 3 PM.

For water related emergencies call 410-612-1612, 24 hours a day, 7 days a week.

HEALTH INFORMATION ABOUT WATER CONTAMINANTS

Harford County's water supply met requirements set by the EPA and Maryland Department of Environment. However, Federal and State health organizations want people in special risk groups to understand the following information.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider. For more information go to EPA: Consumer Factsheet on Nitrates.

Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you should flush your tap for 30 seconds to 2 minutes before consuming the water. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791) or their web page EPA: Lead in Drinking Water.

Special Precautions - Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791) or their web page

EPA: What if I have special health needs?

FOR MORE INFORMATION GO TO

EPA: Drinking Water and Health: What you need to know

American Water Works Association: Consumer Information

EPA: Water on Tap - what you need to know

WHERE DOES MY WATER COME FROM?

Harford County's water system has 600 miles of water mains with 13 storage tanks holding more than 12 million gallons of water. We have three water treatment plants: one plant treats surface water from either the Loch Raven Reservoir or the Susquehanna River, another plant treats surface water from the Susquehanna River, and the third plant treats ground water from seven wells. In 2007, we provided 4.4 billion gallons of water to 110,000 consumers for an average of 12 million gallons each day. We obtained 2.4 billion gallons of surface water from the Loch Raven Reservoir, 700 million gallons from the Susquehanna River, and 1.3 billion gallons of groundwater from wells tapping the Potomac Group Aquifer.

The well water treatment includes:

- chemical treatment with granular-activated carbon filters
- chlorine to eliminate health-threatening organisms
- soda ash to raise the pH and make the water less acidic
- a phosphate additive for corrosion prevention in the distribution system
- fluoride to help fight tooth decay for consumers

The surface water treatment includes:

- screening the incoming raw water for debris
- Alum and polymer to condition the water for filtration
- powdered activated carbon to chemically absorb contaminants in the water
- filtration through one layer of course filter media (adsorption clarifier)
- filtration through three layers of fine filter media (mixed media filtration)
- chlorine to eliminate health-threatening organisms
- soda ash to raise the pH and make the water less acidic
- a phosphate additive for corrosion prevention in the distribution system
- fluoride to help fight tooth decay for consumers

Surface water requires filtration to remove turbidity from the water. Turbidity is the measure of cloudiness in the water usually attributed to soil runoff. Removing turbidity from the water improves the ability of chlorine to eliminate health-threatening organisms.

Our two surface water plants treat by adsorption clarification and mixed media filtration, with chemical treatment for coagulation. Our well water plant treats by Activated Carbon filtration. All three water plants have chemical treatment for disinfection, pH adjustment, corrosion inhibition, and fluoridation.

Continued demand for more drinking water, along with tougher regulations, will require further capital expenditures in the coming years. A project is under way to expand our largest water plant from 10 to 20 million gallons of water a day. The new design would enhance the plant's multiple barrier protection system. Because of the additional treatment processes, increased construction and engineering costs, along with other related costs; the expansion will probably be more than triple the cost of the original plant, built in 1993 for $20 million.

WATER SYSTEM INFORMATION CONTINUED NEXT PAGE

Harford County also cooperates with other local water utilities. By the use of interconnections with these other utilities we can exchange water from system to system when needed. These systems include the City of Havre de Grace, Maryland American Water Company (in the Bel Air area), Town of Aberdeen, Greenridge Utilities, and Aberdeen Proving Ground.

SOURCE WATER ASSESSMENTS:

COUNTY'S WELLFIELD

The Maryland Department of the Environment Water Supply Program (WSP) has conducted a Source Water Assessment for Harford County's well water supply. The source for Harford County's well water supply is a semi-confined aquifer in the Coastal Plain known as the Potomac Group. Potential sources of contamination within the assessment area are agricultural land use, underground storage tanks, ground water contamination sites, and commercial/industrial sites. It was determined that the water supply is susceptible to contamination by nitrates, volatile organic compounds (e.g. solvents and gasoline), and radionuclides.

SUSQUEHANNA RIVER

The Susquehanna River Basin Commission conducted a Source Water Assessment of the Susquehanna River. Harford County has two surface water plants that can draw water from the lower Susquehanna Sub-basin. Potential sources of contamination are agricultural land use, urban/residential development, boating activities, sewage effluent, major transportation corridors (highways, railroads) and nuclear power generating plants. It was determined that the water supply is susceptible to contamination by turbidity and sediment, microorganisms, inorganic compounds, organic compounds, disinfection byproducts, and radionuclides.

LOCH RAVEN RESERVOIR

The Maryland Department of the Environment has conducted a Source Water Assessment for Loch Raven Reservoir. The reservoir collects water from a 303 square-mile watershed spanning three Maryland Counties: Baltimore, Carroll, & Harford. Harford County has a surface water plant that can draw from the reservoir. Potential sources of contamination are public & private sewage systems, storm runoff from agricultural and developed areas, and spillage of hazardous materials. It was determined that the water supply is susceptible to contamination by phosphorus, turbidity and sediment, pathogenic protozoans, disinfection byproducts, and Sodium.

FOR MORE INFORMATION ON HARFORD COUNTY'S SOURCE WATER ASSESMENTS

Susquehanna River Basin Commision

MDE: Maryland's Source Water Assessment Program

EPA: Source Water Protection

WATER REGULATIONS

The Federal Government signed the Safe Drinking Water Act (SDWA) into law in December of 1974; the law was updated in 1986 and 1996. The push for Federal regulations was due to the possibility that carcinogenic chemicals were contaminating some of our Nation's water supplies. The SDWA identifies substances that are thought to pose a health threat, when present at certain levels. These water quality indicators are called Primary Standards or levels of contaminants.

- The setting of national standards regulating the levels of contaminants in drinking water. These are called the Maximum Contaminant Levels (MCL).
- Requiring public water systems to monitor and report the levels of identified contaminants.
- Definition of an approved treatment technique for each regulated contaminant.
- Mandatory revisions to the list of regulated contaminants, based on the available scientific data on contaminants.
- Filtration required for all surface water supplies, without documented source protection.
- Disinfection of all water supplies
- Prohibits the use of lead products in materials used to carry drinking water.

The SDWA identified 83 contaminants that had to be monitored for by 1989. More contaminants have been added to the list since then. The regulators that make sure the SDWA is followed are the Environmental Protection Agency (EPA) and for the State of Maryland: The Maryland Department of Environment (MDE). Monitoring is based on sanitary surveys, known pollutant sources, water chemistry, and the water source.

The Environmental Protection Agency (EPA) prioritizes contaminants for potential regulation based on risk and how often they occur in water supplies. Our system participates by monitoring for the presence of contaminants for which no national standards currently exist and reporting information on their occurrence to the EPA.

FOR MORE INFORMATION GO TO:

EPA: Safe Drinking Water Act

EPA: Contaminant Candidate List 3

PREVENTION OF PATHOGENS AND CHEMICAL CONTAMINANTS

Presently, the EPA and the Maryland Department of Environment (MDE) decide how often we must test for contaminants. The frequency of the tests depends on the vulnerability of our water supply to sources of these contaminants. Government regulators found the presence or absence of some contaminants can be very consistent, so we may only run some tests once a year. Usually tests are done biannually, quarterly, monthly, weekly, daily, and some contaminants like turbidity are monitored continuously.

EXAMPLES OF PATHOGENS:

Bacteria, Viruses, and Intestinal Parasites are classes of disease causing organisms (pathogens) that can be transmitted through water.

Bacteria

- Shigella {shuh-gel-uh} - dysentery
- Bacillus typhus {ba-sil-us ti-fus} - typhoid fever
- Vibro cholerae {vi-bro ka-luh-ra} - cholera

Viruses

- Infectious Hepatitis {in-fek-shus hep-uh-ti-tus}
- Poliovirus {po-lee-o vi-rus}

Intestinal Parasites

- Giardia lamblia {jee-r-dee-uh lam-blee-uh}
- Cryptosporidium {kript-o-spor-id-ee-um}

Harford County Water Operations uses chlorine and filtration as the primary means of protection against pathogens. Chlorine is a chemical element that was first used for the disinfection of drinking water in the 1890s. One such application of chlorine occurred in England following a 1897 typhoid epidemic where chlorine was used to disinfect the water mains. The first continuous use of chlorine in the United States was at a Jersey City, New Jersey water utility in 1908. Chlorine is a well proven disinfectant for the prevention of water borne disease outbreaks.

Before chlorination of drinking water, typhoid fever killed about 25 out of every 100,000 people in the U.S. annually, a rate that is close to the statistics of contemporarily automobile accidents.

Unfortunately there are some pathogens that are resistant to chlorine. These organisms fall in the class of intestinal parasites with the most notorious being Giardia Lamblia and Cryptosporidium. Generally these pathogens are found in surface waters, and the most effective means of protection is to keep the turbidity of the water at a very low level with multimedia filtration. For this reason the Environmental Protection Agency (EPA) and the Maryland Department of the Environment (MDE) have set the maximum allowable level of instantaneous turbidity at 1.0 NTU, and the finished water must be less than or equal to 0.3 NTU for 95% of the time during each month.

PREVENTION OF CONTAMINANTS CONTINUED NEXT PAGE

QUALITY ASSURANCE AGAINST PATHOGENS

Harford county monitors three criteria to judge our effectiveness in the battle against pathogens .

We constantly monitor the turbidity levels of the water leaving our surface water treatment plants. For 2007 the average turbidity at the Abingdon Water Treatment Plant was 0.040 NTU, which is ten times below the allowable level.

We constantly monitor the chlorine residuals of the water leaving our surface and groundwater treatment plants. We not only want the chlorine to produce an initial disinfection of the water, but we also want to maintain a minimum chlorine residual throughout the entire distribution system. The 2007 chlorine levels in our distribution system did not fall below the 0.2 mg/l minimum residual allowed.

We take samples throughout the distribution system to test for the presence of bacteria. In 2007 we tested 1656 samples, taken from every section of our distribution system, for Total Coliform bacteria. We also randomly monitor for Giardia and Cryptosporidium.

FOR MORE INFORMATION GO TO EPA: Total Coliform Rule Revisions

QUALITY ASSURANCE AGAINST CHEMICAL CONTAMINATION

An example of how the monitoring system can help safeguard our water supply: In February of 1992 routine monitoring found the presence of Trichloroethylene (TCE) in two of Harford County's Wells located at Aberdeen Proving Ground. Further study showed that the water our customers were receiving had TCE levels well below the Maximum Contaminant Level of 5 ppb (parts per billion.) Even though we met guidelines set by the SDWA, the County Executive and APG officials decided to treat the Well water to remove the TCE. The Department of the Army built a GAC (Granular Activated Carbon) filtration system that was in service by the summer of 1993. The TCE concentration of water treated by this system is nondetectable, or better than ten times below the allowable consumption concentration.

In 2001 the Harford County Executive, and APG officials decided to expand treatment to all wells that supply water to the Perryman Water Treatment Plant. The units were put in service in 2003 with the number of GAC filtration units increased from 5 to 11. The reason for expanding treatment was to be ready incase there was a migration of contamination beyond the two wells served by the GAC filters.

Both the County and APG continue to actively monitor, share results, ideas, and recommendations; Assuring the five (5) million gallon per day (MGD) County wellfield is available to provide safe high quality water to the customers of Harford County's water system.

FOR MORE INFORMATION GO TO EPA: Drinking Water Standards

PREVENTION OF CONTAMINANTS CONTINUED NEXT PAGE

PERCHLORATE

Perchlorate is both a naturally occurring and man-made chemical. Most of the perchlorate manufactured in the United States is used as the primary ingredient of solid rocket propellant. It occurs as ammonium, potassium, magnesium or sodium salts. Perchlorate salts are used in a variety of products such as bleached paper (newsprint), electronic vacuum tubes, car air-bags, leather tanning, fireworks and fertilizer.

Perchlorate may interfere with iodide uptake into the thyroid gland. Because iodide is an essential component of thyroid hormones, perchlorate may disrupt how the thyroid functions.

Perchlorate is currently a non-regulated contaminant with no established maximum contaminant level (MCL). On 1/22/03, the EPA reaffirmed its interim guidance in the range of 4 to 18 parts per billion (ppb). The Maryland Department of Environment (MDE) has advised public notification if perchlorate levels should reach 1 ppb in the finished drinking water. In order to manage this level one must test for the presence of the chemical below 1.0 ppb.

Current technology allows for the testing of Perchlorate at a level of 1 ppb and above. However, some laboratories use a technique to estimate perchlorate levels below 1 ppb by spiking a water sample to bring the concentration within the range of current testing procedures. The difference between the perchlorate added to the water sample and the test result is the estimated level of perchlorate in the sample.

In Spring of 2002, Harford County's treated well water was tested for perchlorate at a detection level of 4 ppb, in accordance with EPA's Unregulated Contaminant Monitoring Rule. Test results showed no perchlorate detected. During the summer quarterly testing by Aberdeen Proving Ground (APG), Harford County wells and finished water was tested for perchlorate at a detection level of 1.0 ppb. Test results showed no perchlorate detected. During the next APG quarterly sampling on 12/10/02, using the technique of estimating for perchlorate below 1ppb, one well showed an estimated level of 0.78 ppb. Harford County and APG began the simultaneous retesting on all wells and treatment points. Due to the varying degree of results from two independent testing agencies, the location of the "positive" hits, and the fact that perchlorate detection can produce false positives due to interferences with other compounds; there is a lack of confidence in the estimating procedure itself.

Harford County and Aberdeen Proving Ground have decided on the following course of action. First, do additional testing of all wells and finished water utilizing three independent laboratories, and two separate quantitative techniques. Second, work with EPA to see if the samples with an estimated perchlorate level were due to interferences and identify or correlate interferences at these low levels (estimated values ranged from a low of non detectable to a high of 0.78 ppb). Third, Investigate potential sources for the presence of perchlorate and determine if these levels are normally occurring to the area. And finally, continue to research appropriate treatment options should the presence of perchlorate rise to advisory limits set by MDE and EPA.

FOR MORE INFORMATION GO TO EPA: Perchlorate

PREVENTION OF CONTAMINANTS CONTINUED NEXT PAGE

PHARMACEUTICALS AND WATER SUPPLIES

Pharmaceuticals and personal care products have been detected in trace amounts in surface water; drinking water and wastewater effluent sampling conducted in both Europe and the U.S. Today the technology exists to detect more substances at lower levels than ever before. These compounds are being found at levels 1000 times lower than where drinking water standards are typically set. The fact that a substance is detectable in drinking water does not mean the substance is harmful to humans. To date, research throughout the world has not demonstrated an impact on human health from the trace amounts of pharmaceuticals and personal care products found in drinking water.

For more information on this subject from the American Water Works Association use the following link: AWWA: Pharmaceuticals and Drinking Water

MTBE (methyl-t-butyl ether)

MTBE is used as an oxygenate additive to gasoline to help lower carbon monoxide emissions. Although improvements in air quality have been made, contamination of drinking water supplies has occurred as a result of MTBE use. MTBE is more soluble in water than most other petroleum components, making it more likely to impact public and private drinking water. There is no data concerning the health effects to humans of MTBE contaminated drinking water. Laboratory tests support a concern for potential human health hazard, but there are significant uncertainties about the degree of risk associated with the low concentrations typically found in drinking water. In 2007, there was no detection of MTBE in the Harford County's water system.

For more information on MTBE go to the EPA website: EPA: MTBE

CONSERVING RESERVOIR WATER

Susquehanna River replaced Loch Raven Reservoir as the source of water for the Abingdon Water Treatment Plant on December 18, 2007. The Susquehanna water was used for approximately 3 months until the reservoir levels started to rise again. The last time water sources were switched was for 9 months in 2002. At that time the state was suffering from severe drought conditions. Although we were only in a drought watch, the recent switch was to conserve reservoir water while the Susquehanna River was running high, and to avoid shortages during warmer weather. Everyone can help by using water wisely. For information on water efficiency, visit these websites:

MDE - Water Conservation

EPA - Watersense

WATER SYSTEM SECURITY

Harford County Government completed a vulnerability assessment of our water system in 2003. The assessment, per EPA guidelines, was done to evaluate our water systems susceptibility to potential threats and identify corrective actions. We are implementing these ideas through improved procedures, emergency response planning, and new security technology. We are also working with other utilities, government agencies, and law enforcement to minimize threats. Since a water or wastewater system has numerous facilities that can be isolated and cover a large area, they can be difficult to secure and patrol. Residents can assist by being aware of suspicious activities and reporting them to local law enforcement (call 911).

Examples of suspicious activities might include:

- People cutting or climbing a security fence
- People discharging material into a water source (stream, river, reservoir)
- Unmarked vehicle parked near a water source or facility for no apparent reason
- Suspicious opening or tampering with fire hydrants, manhole covers, buildings, or equipment
- People climbing on top of water tanks
- People photographing or video taping utility facilities, structures, or equipment
- Strangers hanging around locks or gates

For more information go to the EPA website: EPA: Water Security

[EPA: Drinking Water & Ground Water Kid's Stuff]

[Click Here to Have Fun With Find a Water Word Game]

WATER DEFINITIONS

Action Level - If a contaminant exceeds this concentration, it can trigger improved treatment techniques or other requirements a utility must follow.

Chlorine - A greenish-yellow gas, it occurs in nature in numerous and abundant compounds, e.g., sodium chloride (common salt). Chlorine is soluble in water; chlorine water has strong oxidizing properties. Chlorine is used in water purification, and as a disinfectant and antiseptic.

Coliform Bacteria - A group of bacteria found in the intestines of warm-blooded animals (including humans). The presence of coliform bacteria indicates that the water is polluted and may contain disease causing organisms. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present. If this limit is exceeded, the water supplier must notify the public by newspaper, television or radio.

Compliance Level (CL) - Is the value used to determine compliance with MCL or TT. The CL for contaminants can be a maximum test value, an average, or meeting a condition for a certain percentage of the time.

Cryptosporidium - Intestinal Parasites that can cause gastrointestinal illness (e.g., diarrhea, vomiting, cramps). In 2007, none were found in either the untreated riverwater or the treated drinking water. See Special Precautions.

Disinfection - A process designed to kill most microorganisms in water, including essentially all disease causing organisms. There are several ways to disinfect, with chlorine being the most frequently used in water treatment.

Disinfection By-Products - are formed when disinfectants used in water treatment plants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established have been identified in drinking water, including trihalomethanes, haloacetic acids, bromate, and chlorite.

Distribution System - A network of pipes, valves, fire hydrants, service lines, meters, and pumping stations that deliver water to homes, businesses, and industries for drinking and other uses. This water is also used for fire protection.

EPA (Environmental Protection Agency) - An independent US agency in the executive branch of the federal government. It was established in 1970 to reduce and control air and water pollution, noise pollution, and radiation and to provide safe handling and disposal of toxic substances. The EPA engages in research, monitoring, and the setting and enforcement of national standards.

DEFINITIONS CONTINUED NEXT PAGE

Filtration - A physical and chemical process for the removal of turbidity from water.

GAC (Granular Activated Carbon) - Adsorptive granules of carbon usually obtained by heating carbon (such as wood). These granules have a high capacity to remove certain trace and soluble materials from water.

Giardia lamblia - Intestinal Parasites that can cause gastrointestinal illness (e.g., diarrhea, vomiting, cramps). In 2007, none were found in either the untreated river water or the treated drinking water. See Special Precautions.

Groundwater - Part of the precipitation that falls infiltrates the soil and percolates down until all voids in the earth's materials are filled with water. This zone of water is called ground water with the upper part of the zone called the water table. A Well penetrates the water table and is used to extract water from the ground water basin.

Inorganics - Material such as sand, salt, iron, calcium salts and other mineral materials. Inorganic substances are of mineral origin, whereas organic substances are usually of animal or plant origin.

MCL (Maximum Contaminant Level) - The "Maximum Allowed" is the highest level of a contaminant that is allowed in drinking water as set by federal law.

MCLG (Maximum Contaminant Level Goal) - This is the level of a contaminant in drinking water, below which there is no known or expected health risk. The MCLGs allow for an extra margin of safety, over and above the Maximum Contaminant Level (MCL).

MDE (Maryland Department of the Environment) - An agency of the State of Maryland that monitors for and enforces federal and state regulations. Is held accountable by the EPA.

Nephelometric Turbidity Unit (NTU) - A unit of measure for the clarity of water. A turbidity level of 5 NTU is just noticeable to the average person.

Ninetieth Percentile (for lead and copper testing only) - Ninety percent of the homes, where the tap water was tested, are at or below this value. EPA only requires the voluntary testing of homes built between 1983 and 1986 where lead solder has been used in the plumbing.

Nondetectable - Is the value given for a specific water quality test when there isn't any of the particular substance found. A nondetectable value doesn't mean the value is zero, but the level is below the sensitivity of current analysis procedures.

Organics - A term that refers to chemical compounds made from carbon molecules. These compounds may be natural materials (such as animal or plant sources) or man-made. Volatile Organic Chemicals are organic compounds that evaporate readily at normal pressures and temperatures.

DEFINITIONS CONTINUED NEXT PAGE

PCB (polychlorinated biphenyl) - Any of a group of organic compounds that were once widely used as liquid coolants and insulators in industrial equipment, e.g., power transformers. They were later found to be dangerous environmental pollutants, and US manufacture of PCBs ended in 1977.

ppb (Parts Per Billion) - A measurement unit for the level of contaminants in water. One part contaminant to one billion parts water. One ppb corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

ppm (Parts Per Million) - A measurement unit for the level of contaminants in water. One part contaminant to one million parts water. One ppm corresponds to one minute in two years or a single penny in $10,000.

ppt (Parts per trillion) - A measurement unit for the level of contaminants in water. One part contaminant to one trillion parts water. One ppt corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water. Results for testing radon in water are expressed as pCi/L.

Radionuclides - A term for radioactive elements that are sometimes found in drinking water. The MCLs for radiological contaminants are divided into two categories: (1) natural radioactivity which results from well water passing through deposits of naturally occurring radioactive materials; and (2) man-made radioactivity such as might result from industrial wastes.

SDWA (Safe Drinking Water Act) - An act passed by the US congress in 1974. The Act establishes a cooperative program among local, state and federal agencies to provide safe drinking water for consumers.

Surface Water - The accumulation of water on the surface of the ground as a result of runoff from precipitation. Surface water for drinking water supplies are usually classified into rivers, lakes, or reservoirs.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water. The (CL) compliance level for meeting turbidity standards is based on the Treatment Technique used instead of using a MCL.

Trihalomethanes - A compound that can be formed with hydrogen and either chlorine or bromine. It is a suspected cancer causing contaminant.

Turbidity - The cloudy appearance of water caused by the presence of suspended matter. A turbidity measurement is used to indicate the clarity of the water. A turbidimeter is an instrument that measures the amount of light that is reflected by suspended particles in the sample of water. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms.

Volatile Organic Chemicals (VOC) - Organic compounds that evaporate readily at normal pressures and temperatures.